

## Occurrence of Shikoku Representatives of Blind Trechines (Coleoptera, Trechinae) Originated in Eastern Kyushu, Southwest Japan

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**Abstract** Two new blind species of the trechine genus *Rakantrechus* are described from the western coastal areas of the Island of Shikoku, Southwest Japan, under the names *Rakantrechus* (*Paratrechiama*) *obscurus* S. UÉNO et NAITÔ and *R.* (*Pilosotrechiama*) *peninsularis* S. UÉNO et NAITÔ. The former belongs to the *nomurai* group of the subgenus *Paratrechiama*, and the latter bears a very close relationship to the type species of the subgenus *Pilosotrechiama*, both endemic to limestone caves and mine adits in the eastern coastal areas of the Island of Kyushu so far as known up to the present. These are the first indisputable evidences of the close faunal relationship between the two islands disclosed in blind trechines on the Shikoku side of the Bungo Channel.

It is well known that the fauna and flora of the Island of Shikoku bear a close relationship to those of central Kyushu. This is true not only for epigeal animals and plants, but also for endogean and hypogean species including flightless blind trechine beetles. The best example of such a relationship in the Trechinae is found in the *Rakantrechus* complex, which is represented by three genera in the western part of Shikoku, i.e., *Rakantrechus*, *Yamautidius* and *Chaetotrechiama* (cf. UÉNO, 1982 a–c, etc.), and by two genera in central Kyushu, i.e., *Rakantrechus* and *Allotrechiama* (cf. UÉNO, 1958, 1960, 1970, etc.). The genus *Rakantrechus* in particular is represented by the subgenera *Rakantrechus* (s. str.) and *Izushites* in the former and by the subgenera *Paratrechiama* and *Pilosotrechiama* in the latter. However, no subgenus has been known up to now to have its representatives on both sides of the Bungo Channel that separates Shikoku from Kyushu. The other two subgenera *Uozumitrechus* and *Izushites* are somewhat different both taxonomically and zoogeographically, and do not show any

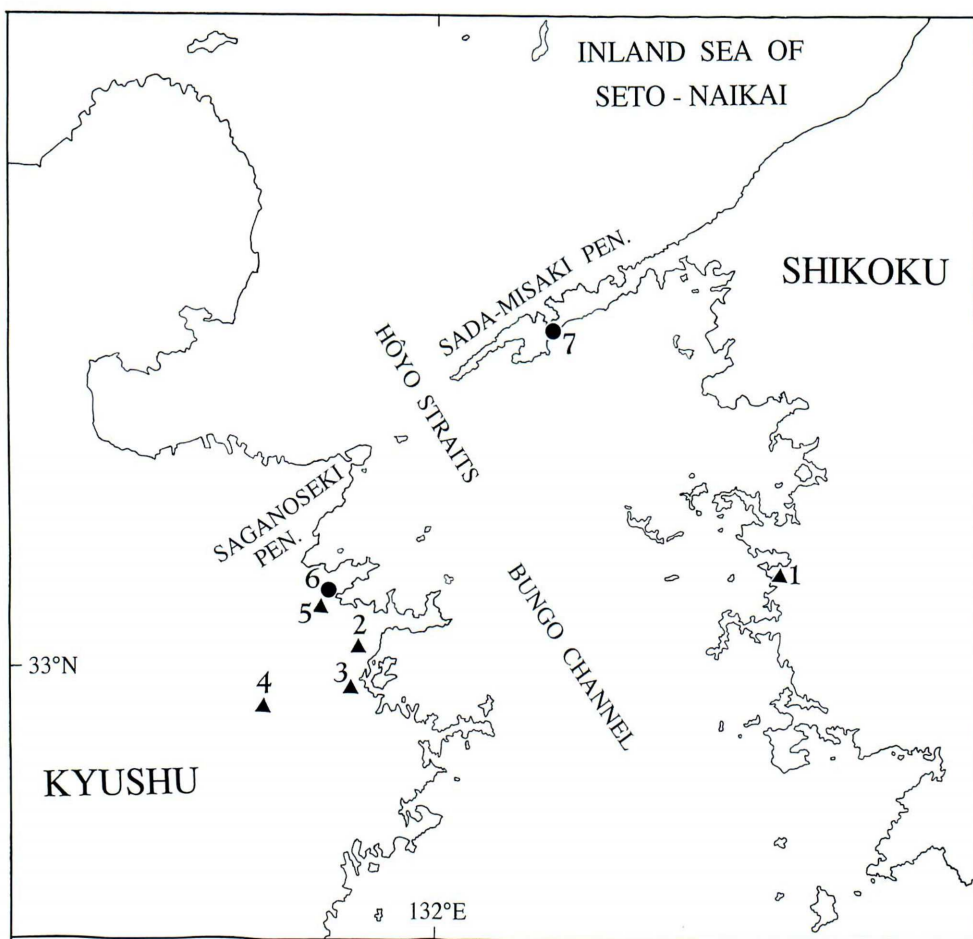


Fig. 1. Map showing the localities of blind trechine beetles on both sides of the Bungo Channel, Southwest Japan; black triangles: *Paratrechiama*; black circles: *Pilosotrechiama*. — 1, Odorokami (*Rakantrechus obscurus* S. UENO et NAITÔ); 2, Karyû-dô Cave (*R. nomurai nomurai* S. UENO); 3, Tsuruoka-kô Adit (*R. nomurai fodinarum* S. UENO); 4, Onagara-dô Cave (*R. nomurai humerosus* S. UENO); 5, Kozono-no-ana Cave (*R. elegans* S. UENO); 6, Tokura-no-ana Cave (*R. mirabilis* S. UENO); 7, Kamagi (*R. peninsularis* S. UENO et NAITÔ).

direct relationship between Shikoku and Kyushu.

In the autumn of 2007, the second author of the present paper came across a blind trechine beetle on a low hill near the western coast of Shikoku. Most unexpectedly, it did not appear to belong to any genera or subgenera theretofore known from the island, but looked similar to certain species of the subgenus *Paratrechiama* of central Kyushu. Closer examination proved that his first impression was indisputably correct, and that the trechine beetle was closely related to *R. nomurai* S. UENO (1960, p. 37) of the

*nomurai* group of *Paratrechiamia*, whose members were known only from caves and mines in the Saiki-Tsukumi area of eastern Kyushu.

Only six weeks after this astonishing discovery, he made more unexpected finding on the Sada-misaki, the longest and slenderest peninsula in Japan protruding west-southwestwards from the northwestern corner of Shikoku towards the Saganoseki Peninsula of eastern Kyushu. It was recognised on the spot that the trechine beetle discovered on the Sada-misaki was a second species of the subgenus *Pilosotrechiamia*, whose type species, *R. (Pil.) mirabilis* S. UÉNO (1958, p. 201, figs. 1–2) has been known only from a pair of specimens of the type series, and since the small limestone hill embracing the type cave was excavated by a lime factory sometime in the 1960's, no more topotypical specimens of this interesting species have been obtainable since then. His discovery of a second species of the subgenus was therefore very important not only zoogeographically but also from the taxonomical viewpoint.

The discoveries of these two species are also significant because they are incredibly close to their counterparts occurring in eastern Kyushu, suggesting that their speciation must have taken place in rather a recent period, most probably sometime in the last Glacial Epoch after the separation of Shikoku from Kyushu was completed. In view of all these importance, we are going to describe the two new species in the present paper under the names *Rakantrechus (Paratrechiamia) obscurus* and *R. (Pilosotrechiamia) peninsularis*. The abbreviations employed herein are the same as those explained in previous papers of the first author's.

*Rakantrechus (Paratrechiamia) obscurus* S. UÉNO et NAITÔ, sp. nov.

(Figs. 2–4)

Length: 4.80–5.60 mm (from apical margin of clypeus to apices of elytra).

Closely similar in external morphology to *R. (P.) nomurai nomurai* S. UÉNO (1960, p. 37, figs. 1–2; 1985, p. 77, pl. 14, fig. 28) from Karyû-dô Cave in Saiki-shi of eastern Kyushu, and agrees with it in many respects, but slightly larger on an average and recognised at first sight by the dark coloration of the body. Evidently different from it in the short broad aedeagus with large teeth-patches inside the inner sac and with short broad styles bearing only two short setae at each apex.

Colour dark brown, particularly darker in the fore body, basal halves of elytra, and femora, shiny, faintly iridescent in the basal fovea of elytra; palpi, apical halves of antennae, and abdominal ventrites more or less lighter than dorsum. Apterous and anophthalmic. Microsculpture fine though distinctly impressed on head, mostly consisting of transverse meshes; largely perceptible on pronotum and consisting of fine transverse lines; largely evanescent on elytra though partially observable as fine transverse lines.

Head subquadrate, about as long as wide, widest at about basal third, and nearly parallel-sided; genae either straight or very slightly arcuate, completely glabrous; neck broad, neck constriction distinct though usually very shallow; frontal furrows deeply



impressed except for posterior parts, moderately arcuate, and not angulate at middle; frons and supraorbital areas moderately convex, the latter bearing two pair of supra-orbital setae on lines convergent posteriad; apical margin of labrum nearly straight at middle; mandibles fairly long, gently incurved at the acute apices; mental tooth porrect, truncated at the tip; palpi slender; antennae long and slender, reaching apical two-fifths of elytra, pedicel the shortest and antennomere 3 the longest, terminal antennomere about as long as antennomere 8.

Pronotum subcordate, evidently wider than head, about as long as or a little longer than wide, widest at about three-fourths from base, and contracted posteriorly; PW/HW 1.34–1.43 (M 1.39), PW/PL 0.93–0.98 (M 0.95), PW/PA 1.35–1.48 (M 1.42), PW/PB 1.49–1.64 (M 1.56); sides rather widely reflexed in front, the borders becoming narrower posteriad towards ante-basal sinuation located between basal sixth and fifth, moderately arcuate in front, nearly straight at middle, and either subparallel or very slightly convergent towards hind angles, with shallow ante-basal sinuation; apex about as wide as or a little wider than base, nearly straight or very slightly arcuate, PA/PB 1.01–1.15 (M 1.10), with front angles obtuse, narrowly rounded, and hardly produced forwards; base slightly but widely emarginate; hind angles usually sharp and often denticulate at the tips, protrudent posteriad or postero-laterad, with postangular setae widely removed forwards; dorsum convex, especially in anterior half, with fine median line narrowly deepened in basal area; apical transverse impression shallow, basal one narrow but distinct, arcuate, interrupted at middle, and laterally reaching the bottom of basal foveae, which are fairly large, deep, and shallowly extending anteriad; postangular carinae vestigial; basal area narrow and more or less uneven. Lateral expansion of propleura narrowly visible from above behind middle.

Elytra oblong-ovate, much wider than pronotum, evidently longer than wide, widest at about middle, and almost equally narrowed towards apices and bases, though apical parts are ampler than the basal; EW/PW 1.72–1.83 (M 1.75), EL/PL 2.61–2.74 (M 2.67), EL/EW 1.56–1.65 (M 1.60); shoulders feebly arcuate, with prehumeral borders oblique and nearly straight; sides feebly arcuate from behind shoulders to before apices, which are conjointly and rather widely rounded, moderately bordered except for prehumeral parts which are finely bordered; dorsum convex, steeply declivous in marginal areas, transversely depressed in basal areas, forming a fovea delimited on each side by obtuse basal carina formed by proximal portion of interval 5; striae superficial, indistinctly crenulate, clearly impressed near suture but obliterated at the side, stria 8 distinctly impressed in apical half; scutellar striole short but distinct; apical striole distinct, moderately curved, free at the anterior end though directed to the site of stria 5; intervals flat except for two parasutural ones; apical carina not prominent; stria 3 with two setiferous dorsal pores at  $1/7$ – $1/6$  and  $2/5$ – $4/9$  from base, respectively; stria 5 also with two setiferous dorsal pores at about  $1/4$  and  $3/5$ – $2/3$  from base, respectively; preapical pore located at the apical anastomosis of striae 2 and 3, and more distant from apex than from suture; marginal umbilicate series typical of *Paratrechiama*.

Ventral surface smooth; anal ventrite provided with a pair of marginal setae in ♂,

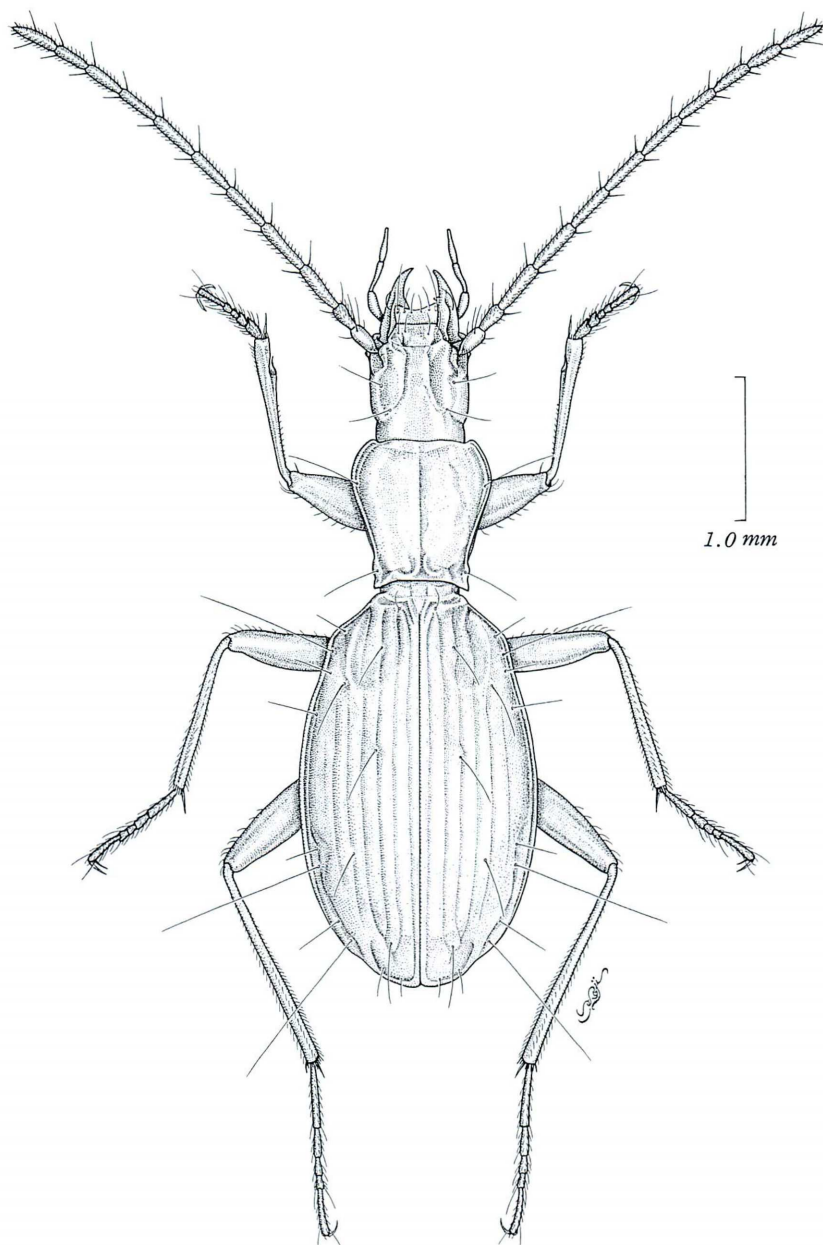
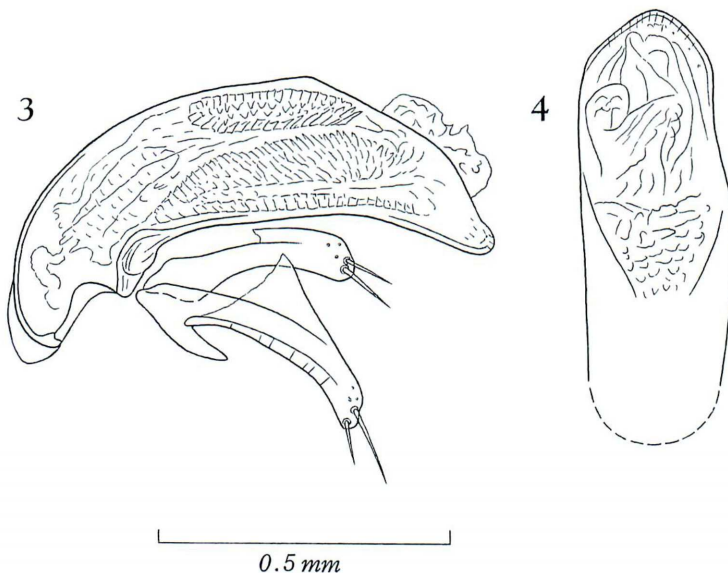


Fig. 2. *Rakantrechus* (*Paratrechiama*) *obscurus* S. UÉNO et NAITÔ, sp. nov., ♂, from Odorokami in Tsushima-chô.



Figs. 3-4. Male genitalia of *Rakantrechus (Paratrechiana) obscurus* S. UÉNO et NAITÔ, sp. nov., from Odorokami in Tsushima-chô; left lateral view (3), and apical part of aedeagus, dorso-apical view (4).

with two pair of them in ♀. Legs fairly long and slender; protibiae gently dilated towards apices, longitudinally grooved on the external face, and glabrous on the anterior face; mesotibia about two-fifths as long as elytra, metatibia about a half as long as elytra, and very slightly outcurved at the apical part; tarsi thin, mesotarsus about two-thirds as long as mesotibia, metatarsus about three-fourths as long as metatibia; tarsomere 1 a little shorter than tarsomeres 2-4 combined in mesotarsus, a little longer than tarsomeres 2-4 combined in metatarsus.

Male genital organ small and rather lightly sclerotised, similar to that of *R. nomurai* in basic conformation, but markedly different in the shape of aedeagal apical lobe, development of teeth-patches inside the inner sac, and apical setae of styles. Aedeagus nearly one-fourth as long as elytra, short and broad, about as high as wide, with dorsal margin almost semicircularly rounded in profile; viewed dorsally, aedeagus broad to the base of apical lobe, emarginate on the left side at the level of apical orifice, and then abruptly narrowed to obtuse extremity; viewed laterally, apical part tapered and decurved from behind middle, abruptly narrowed from the base of apical lobe, and narrowly rounded at the terminal portion; basal part small, not sharply bent at the level of parameral articulation, and deeply emarginate at the sides of basal orifice; sagittal aileron hyaline, of moderate size; ventral margin nearly straight at middle in profile. Inner sac devoid of differentiated copulatory piece, but largely covered with scales of various degree of sclerotisation, which form elongate teeth-patches on the left side, smaller dorsal one above larger ventral one. Styles relatively broad, left style much



longer than the right, each bearing two short setae at the apex.

*Type series.* Holotype: ♂, allotype: ♀, paratypes: 6 ♀♀, 21-X-2007, T. NAITÔ leg. Deposited in the collection of the Department of Zoology, National Museum of Nature and Science, Tokyo.

*Type locality.* Odorokami, 40 m in altitude, of Tsushima-chô [now included in Uwajima-shi] at the western part of Ehime Prefecture, western Shikoku, Southwest Japan.

*Notes.* Though almost identical with *R. nomurai* in external characteristics, this new species is fully described since the original description of *R. nomurai* was made half a century ago, when our knowledge of the Japanese Trechinae was still insufficient. The dark coloration of its body is quite exceptional among the blind trechines of Japan, in spite of the fact that similarly dark-coloured blind species are often found in the caves of Southwest China and Indo-china.

The present new species was found near the source of a narrow branch stream of the Howara-gawa River at the southeastern foot of Amamori-yama (303 m in height), about 5 km north by east from the base of the Yura Peninsula. This locality is about 56 km distant to the east by north in a beeline beyond the Bungo Channel from Karyû-dô Cave, the type locality of *Rakantrechus* (*Paratrechiamia*) *nomurai nomurai*, and about 60.5 km distant to the east in a beeline beyond the Bungo Channel from the site of Kozono-no-ana Cave, the lost type locality of *R. (P.) elegans* S. UENO (1960, p. 43, fig. 5; 2006, p. 30). All the specimens of the type series were found out from a heap of weathered shale accumulated on a shale bed. Most of them occurred in rather a shallow part of the heap, in particular from among tangled grass roots.

It is difficult to determine by what means the ancestor of *R. obscurus* reached the western coast of the Island of Shikoku and successfully colonized there. It must have originated somewhere in central Kyushu, since its con-subgenera flourish now in only that area and nowhere else. To disperse eastwards from eastern Kyushu, however, the ancestral beetle must have crossed the Bungo Channel, or a strong tidal current, even though the width of the channel is 30 km or so in a beeline. Therefore, immigration by means of sweepstakes dispersal does not seem plausible for flightless blind beetles like trechines. On the other hand, direct dispersal through land bridges may not be possible, since we have to go back to the middle Pleistocene, four hundred or five hundred thousand years ago, for finding an appropriate land connection between the Saiki-Tsukumi area of eastern Kyushu and the Tsushima area of western Shikoku. This lapse of time is too large to keep the trechine beetle unchanged, which was already adapted to the life under the ground and was closely similar in facies and other external peculiarities to highly adapted cavernicolous congeners endemic to eastern Kyushu. Their speciation must have taken place rather recently, most probably in the late Pleistocene. Otherwise, they have become differentiated into species more widely different from each other.

Another possibility of the eastward dispersal of the ancestor of *R. obscurus* is taking the same route as that of *R. (Pilosotrechiamia) peninsularis*, that is, from the Saganoseki Peninsula of eastern Kyushu to Sada-misaki Peninsula of western Shikoku, then spread

southwards along the western coast of Shikoku, and through the base of the Komobuchi Peninsula to the Amamori-yama Hills. This is, however, a long way, and further painstaking investigations are needed for obtaining evidences of its track.

*Rakantrechus (Pilosotrechiama) peninsularis* S. UÉNO et NAITÔ, sp. nov.

(Figs. 5–7)

Length: 4.50–5.20 mm (from apical margin of clypeus to apices of elytra).

Closely similar to *R. (Pilosotrechiama) mirabilis* S. UÉNO, but much larger, with a little smaller head and a little more elongate elytra. Evidently different from the type species in configuration of aedeagus, which is compressed, higher at middle, with larger basal part, much larger teeth-patch inside inner sac, and differently shaped copulatory piece.

Colour somewhat darker than in *R. mirabilis*, reddish brown, shiny; palpi, antennae, venter of hind body, and legs yellowish brown, obviously lighter than dorsum. Body elongate, sparsely covered with fairly long hairs on pronotum, pubescent on elytra; apterous and anophthalmic. Microsculpture clearly impressed and mostly consisting of wide meshes on head, formed by fine transverse lines on pronotum and elytra, though partially degenerated on the former and mostly evanescent on the latter.

Head relatively small though similar in shape to that of *R. mirabilis*, about as wide as long, and widest at about basal third; dorsum depressed and glabrous; frontal furrows distinctly impressed, gently arcuate, and not angulate at middle; frons and supraorbital areas gently convex, the former seemingly ridged, the latter bearing two pair of supraorbital setae on lines convergent posteriad; genae feebly and evenly convex, sparsely covered with fairly long hairs; labrum transverse, shallowly emarginate at the apex; mandibles fairly stout, briefly incurved at the acute apices; mentum with a porrect tooth in apical emargination, which is simple at the tip; palpi slender; antennae long and slender, reaching apical fourth of elytra in ♂, apical three-eighths of elytra in ♀, pedicel the shortest, a little more than a half as long as each of antennomeres 3–7, which is nearly four times as long as wide, antennomeres 8–10 gradually decreasing in length towards apex, terminal antennomere about as long as antennomere 8.

Pronotum cordate, obviously wider than head, slightly wider than long, widest at about three-fourths from base, and contracted at base; PW/HW 1.36–1.47 (M 1.42), PW/PL 1.05–1.13 (M 1.09), PW/PA ca. 1.46–1.56 (M ca. 1.51), PW/PB 1.45–1.64 (M 1.56); sides moderately reflexed in front, narrowly so behind middle, rather strongly arcuate in apical three-sevenths, almost straight behind middle, briefly and deeply sinuate between basal eighth and sixth, and then more or less divergent towards hind angles, which are sharp and protrudent postero-laterad; postangular setae a little removed forwards; apex nearly straight, usually somewhat wider than base, sometimes as wide as the latter, PA/PB ca. 0.97–1.08 (M ca. 1.03), with front angles nearly rounded off; base either straight or very slightly emarginate at middle, briefly but deeply emarginate on each side just inside hind angle; dorsum moderately convex and sparsely



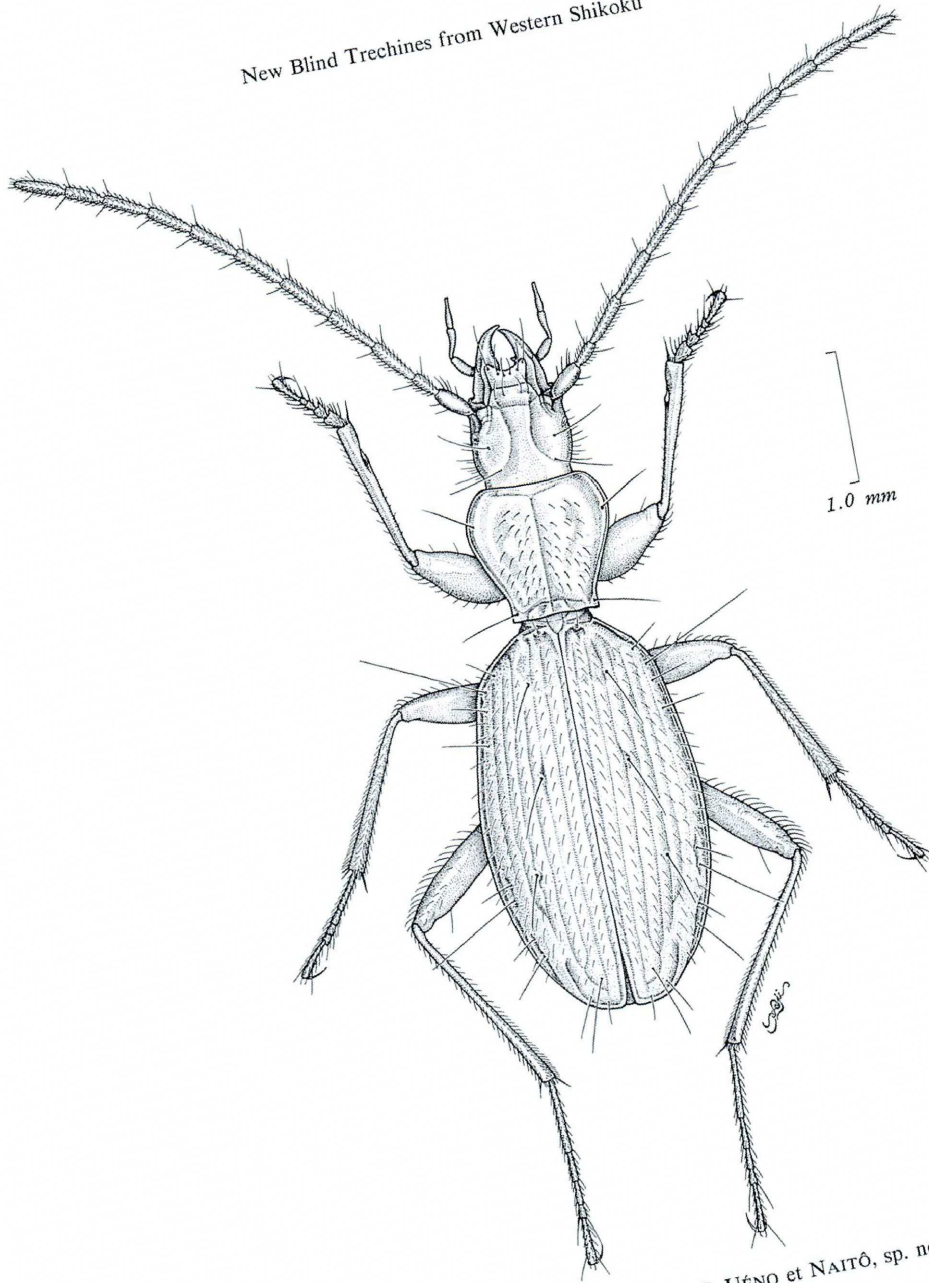
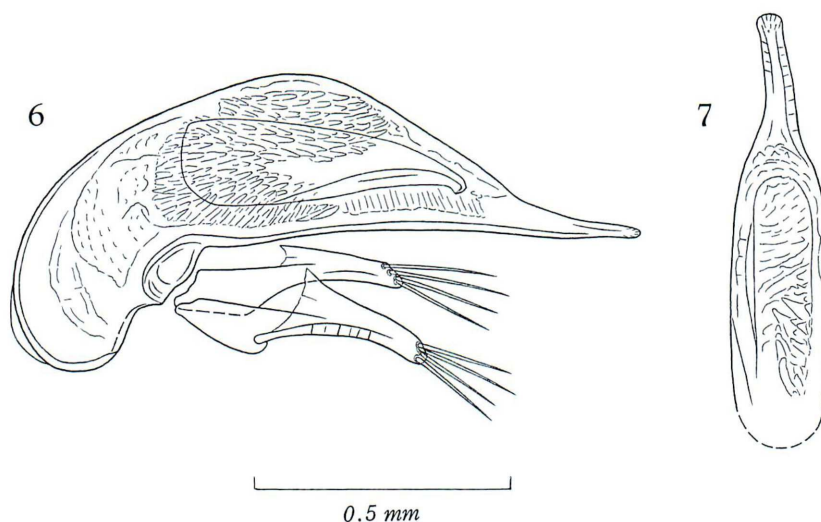


Fig. 5. *Rakantrechus (Pilosotrechiamia) peninsularis* S. UENO et NAITÔ, sp. nov., ♂, from Kamagi on the Sada-misaki Peninsula.

covered with fairly long hairs, particularly in basal half, with sharply impressed median line, which is a little widened in basal area; apical transverse impression mal-defined, basal one arcuate, uneven, and laterally reaching the bottom of basal foveae which



Figs. 6-7. Male genitalia of *Rakantrechus (Pilosotrechiama) peninsularis* S. UENO et NAITÔ, sp. nov., from Kamagi on the Sada-misaki Peninsula; left lateral view (6), and apical part of aedeagus, dorso-apical view (7).

extend anteriorly parallel to lateral borders; postangular carinae obtuse; basal area narrow and more or less uneven. Lateral expansion of propleura hardly visible from above.

Elytra oblong-oval, evidently wider than pronotum, much longer than wide, widest at about middle, and equally narrowed towards bases and towards apices; EW/PW 1.55-1.67 (M 1.59), EL/PL 2.89-3.05 (M 2.97), EL/EW 1.67-1.77 (M 1.71); shoulders widely rounded, prehumeral borders oblique and straight; sides narrowly bordered throughout, nearly straight behind shoulders, then feebly arcuate to before apices, which are widely and conjointly rounded; dorsum rather flat though steeply declivous in narrow lateral parts, shallowly depressed in basal areas and forming a small transverse fovea; striae distinct and almost entire though more or less shallower at the side than on the disc, irregularly crenulate, stria 8 not particularly deepened in apical part; scutellar striole short and shallow; apical striole deeply impressed, moderately curved, and almost joining stria 5 or at least directed to the terminus of stria 5; intervals slightly convex near suture, each bearing irregular rows of pubescence; apical carina distinct though obtuse; stria 3 with two setiferous dorsal pores at about 2/15 and 1/3-2/5 from base, respectively; stria 5 with a single setiferous dorsal pore at about 5/8 from base; preapical pore located at the apical anastomosis of striae 2 and 3, and more distant from apex than from suture; marginal umbilicate series as in the type species.

Ventral surface glabrous and smooth; each ventrite usually with two pair of paramedian setae; anal ventrite provided with a pair of marginal setae in ♂, with two pair of them in ♀. Legs long and slender; protibiae gently dilated towards apices, longitudinally grooved on the external face, and glabrous on the anterior face; mesotibia

about two-fifths as long as elytra, metatibia about five-ninths as long as elytra and nearly straight; tarsi slender, mesotarsus about three-fourths as long as mesotibia, metatarsus about five-sixths as long as metatibia; tarsomere 1 about as long as tarsomeres 2–4 combined in both meso- and metatarsi.

Male genital organ similar in basic conformation to that of *R. mirabilis*, fairly large and moderately sclerotised. Aedeagus four-ninths as long as elytra, compressed, and hardly arcuate except for basal part, with the dorsal margin rather strongly arcuate at middle in profile; basal part large, moderately curved ventrad, with small basal orifice, whose sides are deeply emarginate; sagittal aileron small, narrow and hyaline; apical part tapered from behind middle in lateral view, abruptly narrowed behind apical orifice in dorsal view, and produced into a narrow apical lobe, which is nearly parallel-sided, slightly curved to the right, and narrowly rounded at the extremity in dorsal view, gradually narrowed apicad, almost invisibly reflexed, and blunt at the extremity in lateral view; ventral margin very slightly arcuate in profile. Inner sac armed with a large copulatory piece about four-ninths as long as aedeagus and a large teeth-patch consisting of fairly large teeth at the left side; copulatory piece spatulate, widely lamellar at the proximal part and rounded at the apex, attenuated towards the blunt apex in lateral view, which is briefly bent ventrad; teeth-patch deeply curved in a C-shape, with the dorsal branch narrowly rounded at the apex. Styles rather short with narrow apical parts, left style evidently longer than the right, each bearing four setae at the apex.

*Type series.* Holotype: ♂, allotype: ♀, paratypes: 1 ♂, 5 ♀♀, 2–XII-2007, T. NAITÔ leg. Deposited in the collection of the Department of Zoology, National Museum of Nature and Science, Tokyo.

*Type locality.* Kamagi, 100 m in altitude, of Misaki-chô on the Sada-misaki Peninsula, at the western part of Ehime Prefecture, western Shikoku, Southwest Japan.

*Notes.* This interesting new species can be recognised at first sight by its large size, though almost identical in external morphology with *R. mirabilis*. It was found from a thick scree of argillaceous schist lying at about three-sevenths from the tip of the Sada-misaki Peninsula or 4.3 km east-northeast of the town of Misaki. The scree was tight at the deep part, but loose and rather dry near the surface. The micro-habitat of the trechine beetle lay beneath the loose layer, at a depth of only about 15 cm, though the environmental condition seemed fairly stable at that level.

Extending for about 37 km to the west-southwest from the northwestern corner of Shikoku, this peninsula is the longest and slenderest in the Japanese Islands, and is only 1,150 m wide at a point near the habitat of the trechine beetle. This locality is about 46.5 km distant to the northeast in a beeline beyond the Bungo Channel from the site of Tokura-no-ana Cave in Tsukumi-shi, the lost type locality of *Rakantrechus mirabilis*, which is the type species of the subgenus *Pilosotrechiama*. Up to the late Pleistocene, about twenty thousand years ago, this long peninsula was connected by land with the northeastern tip of the Saganoseki Peninsula of eastern Kyushu, but was separated from it by the subsidence of the Hôyo Straits which are deeper than –400 m. At present, the tips of the two peninsulae are 13.5 km distant from each other.



It is doubtless that the ancestor of *R. peninsularis* dispersed northeastwards on the Hôyo land bridge from the Saganoseki Peninsula, and immigrated into the Sada-misaki Peninsula in the late Pleistocene. It is to be hoped that further investigations will bring forth other evidences and clarify the distributional history of *Pilosotrechiama* on a sounder basis.

## 要 約

上野俊一・内藤隆夫：四国西端部で発見された九州起源のメクラチビゴミムシ類の2新種。—— 四国の動植物相と九州中央部のものとが密接な関連性をもっていることは、古くからよく知られている。この事情は複眼の退化した甲虫類でも同様だが、分化のとくにいちじるしい盲目のチビゴミムシ類では、豊後水道を挟んで四国側と九州側とにまたがる分布域をもつ亜属は、これまでまったく知られていなかった。ところが、2007年の10月に四国西岸の津島町で、本論文の第二著者、内藤が採集した盲目のチビゴミムシは、それまで九州中央部の固有だと考えられていたサイカイメクラチビゴミムシ亜属 *Paratrechiama* に属するもので、しかも大分県佐伯地方の石灰洞に固有のノムラメクラチビゴミムシ *Rakantrechus nomurai nomurai* と外部形態では区別できないほど近縁のものであった。さらに同年の12月になって、佐田岬半島の先端部近くで別の盲目種が発見されたが、この種は大分県津久見地方のみから知られていたウスケメクラチビゴミムシ亜属 *Pilosotrechiama* の第二の種で、亜属基準種のウスケメクラチビゴミムシ *Rakantrechus mirabilis* にきわめて類縁が近く、やはり外部形態では区別できないほど酷似している。

外部形態では識別困難というものの、津島町の種は、異常に暗い体色だけでほかの種から一目で区別できるし、佐田岬のものは基準種より明らかに大型であることで、一見して別種だとわかる。さらにどちらの種も交尾器の形態が既知種のものとは明らかに異なっているので顕著な別新種だと判定される。それで、サイカイメクラチビゴミムシ亜属のものにはウスグロメクラチビゴミムシ *Rakantrechus (Paratrechiama) obscurus* S. UENO et NAITÔ, ウスケメクラチビゴミムシ亜属のものにはサダメクラチビゴミムシ *Rakantrechus (Pilosotrechiama) peninsularis* S. UENO et NAITÔ という新名を与えて、この論文に記載した。

これらのメクラチビゴミムシ類は、九州東部産の種に類縁関係がきわめて近いので、九州起源の祖先種から分化したものであることに疑いの余地はない。しかもその種分化は、ごく新しい時代に起こったものだろう。しかし、拡散の時期や経路の追究はかならずしもやさしくない。2新種のうちで比較的わかりやすいのは、サダメクラチビゴミムシのほうで、その祖先種が、大分県の佐賀関半島から豊予陸橋を通過して佐田岬半島に到達したことはほぼ確実である。豊予陸橋は、更新世最終氷期の末期、今から2万年くらい前に、中央部の西寄りが沈降して豊予海峡になり、東西ふたつの半島に分かれた。したがって、拡散の時期は豊予海峡の成立より前、いずれにしても更新世末期だといえるだろう。ウスグロメクラチビゴミムシのほうも、同じ経路で四国へ到達したのち、西海岸沿いに南下して、津島に行き着いたのかも知れないが、複眼がなくなり生息場所も限定されるようになったメクラチビゴミムシ類にとって、この経路はいかにも長い。いっぽう、九州東部と四国南西部とに挟まれる区域は、豊後水道部分の南方からの沈降によって深い入り込みになったが、更新世中期以降には、それを横切る陸橋の存在が記録されていない。また、豊後

水道は潮流が速いので、いわゆる賭けによる拡散で渡ったとも考えにくい。いずれにしても、ウスグロメクラチビゴミムシの分化拡散の経緯を解明するためには、より多くの証拠が必要で、近い将来にその断片でも発見されて、推論の根拠により高い信頼性の付加されることが望まれる。

### References

- UENO, S.-I., 1958. A remarkable new cave trechid from eastern Kyushu of Japan (Coleoptera, Harpalidae). *Mem. Coll. Sci. Univ. Kyoto*, (B), **25**: 199–203.
- 1960. A new species-group of the genus *Rakantrechus* (Coleoptera, Harpalidae). *Ibid.*, **27**: 37–44.
- 1970. The cave trechines (Coleoptera, Trechinae) of Kumamoto Prefecture in Southwest Japan. *Bull. natn. Sci. Mus., Tokyo*, **13**: 91–116, 1 folder.
- 1982 a. A new genus and species of anophthalmic trechine beetle from a mine adit of Southwest Japan. *Annotnes. zool. japon., Tokyo*, **55**: 51–58.
- 1982 b. *Yamautidius* (Coleoptera, Trechinae), an example of remarkable genitalic differentiation. *J. speleol. Soc. Japan*, **7**: 5–65.
- 1982 c. The *Rakantrechus* (Coleoptera, Trechinae) of the Island of Shikoku, Southwest Japan. *Ibid.*, **7**: 66–77.
- 1985. Carabidae (Trechinae). In UENO, S.-I., Y. KUROSAWA & M. SATO (eds.), *The Coleoptera of Japan in Color*, **2**: 64–88 [incl. pls. 12–16]. Hoikusha, Osaka. (In Japanese, with English book title.)
- 2006. *Rakantrechus elegans* S. UENO, 1960 (p. 30), *Rakantrechus mirabilis* S. UENO, 1958 (p. 54). Ministry of the Environment (ed.), *Threatened Wildlife of Japan —Red Data Book 2nd ed.—*, **5**, 246 pp. Japan Wildlife Research Center, Tokyo. (In Japanese, with English book title and summaries.)

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*Elytra*, Tokyo, **36**(1): 225–226, May 30, 2008

## New Records of the Species of the Genus *Platysoma* (Coleoptera, Histeridae) from the Ryukyus, Japan

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Through the courtesy of Dr. Kiyoshi ANDO, I had the opportunity to examine the histerid collection of Mr. Taichi SHIBATA housed in the Kashihara City Museum, Nara Prefecture, Japan. Under close examination of the collection, I found three unrecorded histerid species of the genus *Platysoma* from the Islands of Amami-Ôshima and Hateruma-jima, the Ryukyus, Japan. The collecting data are as given below: